

REMARKS

The drawings are objected to under 37 CFR 1.83(a) for failing to show the light transmitting layer and light emitting surfaces in the claims. Applicants submit herewith a sheet of drawings showing new Figures 2 and 3 to be added to the application. The specification is amended to refer to the new figures. Figures 2 and 3 and accompanying text are supported by, for example, page 2 lines 30-33, page 3 lines 19-25, and page 4 lines 4-7 of the specification. No new matter is added. Applicants respectfully request that the Examiner enter Figures 2 and 3 and withdraw his objection to the drawings.

Claims 1, 3-8, 14, 18, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson et al., U.S. Patent 6,373,188 (hereinafter "Johnson"). Applicant respectfully traverses the rejection. Independent claim 1 recites "a semiconductor light emitting diode . . . having a light-emitting surface . . . and a phosphor layer provided on a first portion of the light-emitting surface, . . . wherein a second portion of the light-emitting surface is without the phosphor layer, and wherein the second portion is substantially surrounded by the first portion." Claim 1 thus recites a phosphor layer substantially surrounding a region without phosphor on the light emitting surface of a single light emitting diode. In contrast, it is clear from Fig. 1 of Johnson that on Johnson's individual diodes, phosphor layer 30 is a single, contiguous layer, uninterrupted by regions uncovered by phosphor. The phosphor regions in Johnson-cited by the examiner as surrounding an uncovered region are divided among multiple light emitting diodes. Johnson does not teach a "second portion of the light-emitting surface [of a semiconductor light emitting diode] is without the phosphor layer, and wherein the second portion is substantially surrounded by the first portion" as recited in claim 1 and therefore does not anticipate claim 1.

Claims 3-6 and 8 depend from claim 1 and are therefore similarly allowable. Claim 7 is canceled, rendering its rejection moot.

Claim 14 is amended to also recite “a semiconductor light emitting diode . . . having a light-emitting surface.” As described above, the phosphor layer on each individual light emitting diode in Johnson’s device is a single, uninterrupted layer, therefore Johnson does not teach “a plurality of regions of phosphor provided on the light-emitting surface” of a single semiconductor light emitting diode, as recited in claim 14. The phosphor regions cited by the Examiner are divided among multiple light emitting diodes. Claim 14 is therefore allowable over Johnson. Claims 18 and 19 depend from claim 14 and are therefore allowable for at least the same reason.

Claims 1-11, 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Duggal et al., U.S. Patent 6,357,889 (hereinafter “Duggal”). Applicant respectfully traverses the rejection. Claims 1, 9, and 14 each recite a semiconductor light emitting diode having a light-emitting surface. Phosphor is provided on the light emitting surface. The light emitting surface on which the phosphor is provided is therefore part of the semiconductor light emitting diode. Duggal, in contrast, provides a phosphor layer 24 on a surface 20 that is not part of light emitting diodes 32, 34, and 36; rather, the surface on which Duggal’s phosphor is deposited is located far from the light emitting diodes. Duggal therefore does not anticipate claims 1, 9, and 14. Claims 2-6, 8, and 11-13 depend from claim 1. Claim 10 depends from claim 9. Claims 15-17 depend from claim 14. Claims 2-6, 8, 11-13, and 15-17 are therefore allowable over Duggal for at least the same reason as claims 1, 9, and 14.

Claims 1-11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al., U.S. Patent 6,013,982 (hereinafter “Thompson”) in view of Duggal. Applicant respectfully traverses the rejection. Claims 1, 9, and 14 recite “a semiconductor light emitting diode.” Thompson teaches an organic blue light emitting device (see column 1 lines 49-50), not a semiconductor light emitting device. It would not be obvious to substitute a semiconductor light emitting diode for Thompson’s organic light emitting device, because a

person of skill in the art would understand that a semiconductor light emitting diode of suitable quality cannot be formed on Thompson's glass layer 22.

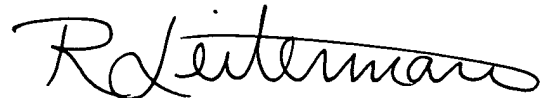
In addition, the Examiner correctly notes that Thompson teaches a fluorescent dye, not a phosphor layer. The Examiner states "it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the Thompson et al with the luminescent layer as a phosphor, as taught by Duggal et al, to achieve different combinations of color mixing." Applicants respectfully disagree. Thompson's fluorescent dyes are applied as a liquid, by an ink jet printer. See for example, column 1, lines 59-60. Phosphor materials are generally particulate, not liquid. A person of skill in the art would not expect that it would be possible to deposit a phosphor as a liquid. Accordingly, Thompson's dyes could not be replaced by a phosphor without using a different technique to deposit the phosphor, such as screen printing, which would likely be more expensive and complicated than using an ink jet printer. Since Thompson's fluorescent dyes already provide a wide range of colors (see, for example, column 3 lines 5-6), a person of skill in the art would not be motivated to tolerate more expensive and complicated deposition techniques in order to use Duggal's phosphor with Thompson's device. Claims 1, 9, and 14 are therefore allowable over the combination of Thompson and Duggal. Claims 2-6, 8, and 11 depend from claim 1. Claim 10 depends from claim 9. Claims 15-17 depend from claim 14. Claims 2-6, 8, 10, 11, and 15-17 are therefore allowable over Thompson and Duggal for at least the same reasons as claims 1, 9, and 14.

In view of the above arguments, Applicants respectfully request allowance of claims 1-19. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

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Respectfully submitted,



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